

Please enter the following amendments:

IN THE CLAIMS:

Please amend claim 16 as is indicated below:

16. (Amended) An integrated, chemically continuous composite material for a load bearing structure having a closed-loop configuration in cross-section defining a predetermined interior, having a plurality of regions continuing across said cross-section from an outside of said structure to said interior of said structure, wherein said composite material comprises:

- a. a first region comprising a porous substrate [composed of at least some mineral and having pores therein];
- b. a second region proximal and interphased with said first region closer to said interior and consisting of a thermoset material bonded to and intermixed with some of said mineral in pores of said porous substrate to form a matrix;
- c. a third region proximal and interphased with said second region spatially closer to said interior and comprising a thermoset material integral with and identical to said thermoset material of said second region but not

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chemically bonded to said mineral in said substrate composition, said thermoset material being formed by setting of a thermosetting resin and a curing agent;

d. a fourth region proximal said third region closer to said interior and comprising a reactive resin chemically reacted and bonded with at least some of said curing agent of said thermoset material of said third region;

e. a fifth region proximal to, and defining said interior having a predetermined interior boundary and predetermined interior dimensions, said fifth region comprising a high tensile strength thermoplastic material

having some of said reactive resin impregnated into said thermoplastic material proximate said fourth region, and wherein said second, third, fourth and fifth regions are chemically bonded together in a catalyzed reaction[.]; and

wherein said second, third, and fourth regions have sufficient shear strength to

transmit loads on said first region to said fifth region, whereby said high tensile strength

thermoplastic material of said fifth region reinforces said load bearing structure.

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28. (Amended) A load bearing structure having a closed-loop configuration in cross-section defining a predetermined interior, comprising an integrated, chemically continuous composite material having a plurality of regions continuing progressively from an outside of said

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structure to said interior of said structure, said composite material comprising:

a. a first compositional region comprising a porous, mineral-containing substrate having pores;

b. a second compositional region comprising a thermoset material chemically bonded by silane to, and intermixed with at least some of the mineral and within said pores of said substrate to form a matrix;

c. a third compositional region proximate and interphased with said second compositional region consisting of a thermoset material selected from the group consisting of polyurethane, epoxy and combinations thereof, and including silane;

d. a fourth compositional region proximate said third compositional region and consisting of polyvinyl chloride having a substantial amount of hydroxyl ions molecularly bonded to some isocyanates; and[,]

e. a sheet of high tensile strength thermoplastic material proximate to and defining said predetermined interior having a predetermined boundary and a predetermined interior dimensions, said high tensile strength thermoplastic material sheet having a tensile strength of at least 2200 pounds per square inch, wherein said high tensile strength thermoplastic material and thermoset material are bonded together and to said substrate with sufficient shear strength to transmit and distribute loads on said substrate to said high tensile strength thermoplastic material to improve the structural load bearing strength of said load bearing structure.

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36. (Amended) A method for lining a conduit having a porous substrate surface, the method comprising the steps of:

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impregnating a face of a sheet of high tensile strength semi-rigid thermoplastic material with a reactive resin that chemically bonds with a curing agent;

positioning said sheet of high tensile strength semi-rigid thermoplastic material within the interior of said conduit spaced apart from said substrate surface to create a space between said semi-rigid thermoplastic material sheet and said substrate surface;

inserting a mixture of a thermosetting material and said curing agent within said space; and

allowing said thermosetting material to bond with said substrate surface, and allowing said face of said thermoplastic material to chemically bond with said curing agent of said thermosetting material, wherein said thermoplastic material and thermosetting material are bonded together and to said substrate surface with sufficient shear strength to transmit and distribute loads on said substrate surface to said high tensile strength semi-rigid thermoplastic material to reinforce said conduit.

Handwritten notes:
- PVC + Humect is better
- loads on pipe to reduce PVC

REMARKS

By the foregoing Amendment, Claims 16, 28 and 36 have been amended.

Favorable reconsideration of the application is respectfully requested.